OBLON
SPIVAK
MCCLELLAND
MAIER
&
NEUSTADT
P.C.

ATTORNEYS AT LAW

GREGORY J. MAIER
(703) 413-3000
GMAIER@OBLON.COM

RAYMOND F. CARDILLO, JR.
(703) 413-3000
RCARDILLO@OBLON.COM

Docket No.: 211402US2

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

RE: Application Serial No.: 09/903,752
Applicants: Noriyuki KAWANO
RCE FILED: November 24, 2004
(Filing Date: July 13, 2001)
For: OBJECTIVE LENS DRIVE APPARATUS FOR USE IN OPTICAL PICKUP
Group Art Unit: 2627
Examiner: ORTIZ CRIADO, Jorge L.

SIR:

Attached hereto for filing are the following papers:

APPEAL BRIEF

Our credit card payment form in the amount of **$500.00** is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Gregory J. Maier
Registration No. 25,599

Raymond F. Cardillo, Jr.
Registration No. 40,440

Customer Number
22850
(703) 413-3000 (phone)
(703) 413-2220 (fax)
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DOCKET NO: 211402US2

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
NORIYUKI KAWANO	: EXAMINER: ORTIZ CRIADO, J.
SERIAL NO: 09/903,752	:
FILED: JULY 13, 2001	: GROUP ART UNIT: 2627
FOR: OBJECTIVE LENS DRIVE APPARATUS FOR USE IN OPTICAL PICKUP	:

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

I. Real Party in Interest

The real party in interest for this Appeal in the present application is TDK Corporation by way of assignment recorded in the U.S. Patent and Trademark Office on August 17, 2006.

II. Related Appeals and Interferences

To the best of Appellant's knowledge there are no other appeals or interferences which will directly affect of be directly affected by, or have a bearing on, the Board's decision in this appeal.

III. Status of Claims

Claims 1-7, 22-31, 42 and 49-56 are pending in this application. Claims 1-7, 22-31, 42 and 49-56 were rejected in the Final Rejection. Claims 8-21, 32-41 and 43-48 were previously canceled.

IV. Status of Amendments

There are no outstanding Amendments.

V. Summary of Claimed Subject Matter

The claimed invention relates to an objective lens drive apparatus for use in an optical pickup forming an optical disk unit which projects an optical spot onto a recording medium to read out information from the recording medium optically. The device includes a magnetic circuit including first and second magnets separated from one another by a gap. A coil unit includes a laminate structure with a focus coil, a tracking coil and a tilt coil. The laminate structure is disposed within the gap. An objective lens is connected to the laminate structure so that movement of the laminate structure results in a corresponding movement of the objective lens. The objective lens is disposed outside of the gap in which the laminate structure is disposed.

In accordance with one of the features of the invention, Appellant has recognized an advantageous arrangement wherein the lens holder 1 includes an objective lens 2. Coil unit 3 includes tracking coil 3tr, focus coil 3f, and tilt coil 3ti. The coil unit 3 is a laminated coil unit. Magnets 5 have a magnetic gap 5g therebetween. Coil unit 3 is arranged within magnetic gap 5g. The objective lens 2 is supported in a cantilevered manner by the lens holder 1 so that the objective lens 2 is disposed outside of the gap 5g in which the coil unit 3

is disposed. See, e.g., specification at Fig. 1 and page 12, line 5 – page 13, line 13. This arrangement is included in the subject matter of independent Claims 1, 22, 27, and 42.

With this arrangement the need for a magnet which is exclusively used to adjust the inclination of the objective lens is eliminated. This results in reduced manufacturing costs and weight of the objective lens drive device. Further, the objective lens drive device can be made more compact.

In accordance with another feature of the invention, the coil unit includes only one focus coil, an even number of tracking coils and two tilt coils. See specification at Figure 1 and page 13, line 14 through page 14, line 8. This arrangement is included in the subject matter of dependent Claim 6.

In accordance with another feature of the invention, the coil unit includes an even number of focus coils, only one tracking coil and two tilt coils. See specification at Figure 7 and page 20, lines 1-7. This arrangement is included in the subject matter of dependent Claim 7.

In accordance with another feature of the invention, only one laminate structure including the focus, tracking and tilt coils is disposed in the gap. See specification at Figure 1 and page 15, lines 9-23. This arrangement is included in the subject matter of dependent Claims 50, 52, 54 and 56.

VI. Rejections To Be Reviewed On Appeal

The rejection to be reviewed on appeal is of Claims 1-7, 22-31, 42 and 49-56 under 35 U.S.C. § 103(a) over JP 10-116431 to Ikegame in view of USP 5,552,228 to Izuka.

VII. Argument

A. Claims 1, 22, 27 and 42

Appellant notes that the Office Action's combination of Ikegame and Izuka to provide the features of independent Claims 1, 22, 27 and 42 is considered to be improper because Appellant believes that the references teach away from each other.

The rejection of the independent claims recognizes that Ikegame fails to disclose that the objective lens is disposed outside the gap in which the laminate structure is disposed. The Office Action asserts

> that this feature is well known and that it would have been obvious to one of ordinary skill in the art at the time of the invention to dispose the objective lens outside the gap so that the movable center of gravity may be accurately set to assure stable driving displacement of the objective lens, to provide an objective driving device wherein the laminate structure can be mounted and assembled easily and accurately for enabling stable driving and displacement of the objective lens, to follow-up accurately with the error signals, and further the consumption of the power necessary for displacing the objective lens and heat evolution during driving of the objective lens may be suppressed in order to ensure stable operation of the semiconductor laser as the light source radiating a light beam on the optical disc via the objective lens and in order to enable the recoding and/or reproducing of information signals with excellent characteristics

as taught by Izuka. However, as disclosed at column 7, lines 1-28 of Izuka, the above advantages are not achieved by providing an objective lens outside the gap in which the laminate structure is disposed. Instead, the above advantages relate to the layout of the magnetic circuit.

Furthermore, as discussed above Appellant asserts that the relied upon features of Ikegame are incompatible with the teachings of Izuka.

A suggested combination of references that requires a substantial reconstruction and redesign of elements as well as a change of basic principles of operation cannot result in a determination of obviousness. In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA

1959). If a modification renders a reference inoperable for its intended purpose, the reference teaches away from the proposed modification. In re Gordon et al., 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). A prior art reference must be considered as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock Inc., 721 F.2d 1540, 1552, 220 USPQ 303, 311 (Fed. Cir. 1983) cert. denied 469 U.S. 851 (1984). See also M.P.E.P. §§ 2141.02(VI), 2143.01(V) and 2145(X)(D).

Ikegame discloses at paragraph [0015] that nodal point NP of the objective lens 2 and the center of gravity of moving parts 7 are in agreement. See Figure 4 and paragraphs [0021], [0036] and [0041]. As stated at paragraph [0024] of the Ikegame machine translation, "Since the balancer for center-of-gravity positioning is not needed while being able to make NP of an objective lens 2 and the center-of-gravity G of moving part 7 easily in agreement, small [of moving part 7] and light weight ionization are realizable."

Thus, as Ikegame specifically teaches that the nodal point of the objective lens and the center of gravity of the moving part are in agreement, the suggested modification including a displaced objective lens would require a substantial reconstruction or redesign as well as a change of basic principles of operation of Ikegame. Furthermore, this would render Ikegame inoperable for its intended purpose.

Izuka discloses, at column 4, lines 46-60, that the center of gravity P of the bobbin 2 carrying objective lens 1 does not coincide for different bobbin and lens combinations. As discussed at column 4, line 64 to column 5, line 49, the conventional design of coils made it difficult to render the center of gravity P of the bobbin 2 constant. Izuka is in part directed to addressing this issue. See column 32, lines 7-15. Thus Izuka does not contemplate the magnetic circuit structure of Ikegame.

Claims 2-7, 23-26, 28-31 and 49-56 that depend from the independent claims clearly distinguish over the applied references for the same reasons as the independent claims.

B. Claim 6

Claim 6 recites that the coil unit includes only one focus coil, an even number of tracking coils and two tilt coils. The Office Action asserts that Ikegame includes only one focus coil, an even number of tracking coils and two tilt coils at paragraph [0028]. However, paragraph [0028] of Ikegame discloses two focal coils.

C. Claim 7

Claim 7 recites an even number of focus coils, only one tracking coil and two tilt coils. The Office Action asserts that paragraph [0028] of Ikegame discloses an even number of focus coils, only one tracking coil, and two tilt coils. However, drawing 10 clearly discloses four tracking coils 4.

D. Claims 50, 52, 54 and 56

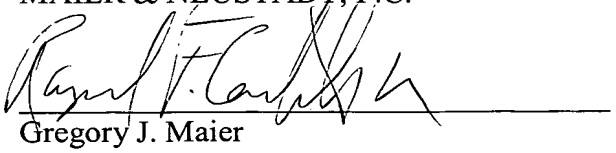
Claims 50, 52, 54 and 56 recite "wherein only one laminate structure including the focus, tracking and tilt coil is disposed in the gap." The Office Action asserts that Ikegame show only one laminate structure in the gap at Figures 11 and 12. Ikegame clearly discloses at Figure 10 and 12 two printed circuit structures 23 and 24 in the gap between magnets 8 and 9.

IX. Conclusion

In view of above remarks, Appellant respectfully requests that the rejections of the Office Action dated March 2, 2006 be **REVERSED**.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Raymond F. Cardillo, Jr.
Registration No. 40,440

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 03/06)

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CLAIMS APPENDIX

Claim 1. An objective lens drive apparatus configured to be used in an optical pickup, comprising:

a magnetic circuit comprising first and second magnets separated from one another by a gap;

a coil unit comprising a laminate structure including a focus coil, a tracking coil and a tilt coil, the laminate structure disposed within the gap; and

an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens, the objective lens disposed outside of the gap in which the laminate structure is disposed.

Claim 2. The objective lens drive apparatus according to claim 1, wherein the magnetic circuit comprises pairs of magnets.

Claim 3. The objective lens drive apparatus according to claim 1, wherein the coil unit comprises a plurality of printed circuit boards, and the focus coil, the tracking coil and the tilt coil are separately disposed on the printed circuit boards.

Claim 4. The objective lens drive apparatus according to claim 1, wherein the coil unit comprises a plurality of first and second printed boards, and the focus coil and the tracking coil are disposed on the first printed board and the tilt coil is disposed on the second printed board.

Claim 5. The objective lens drive apparatus according to claim 1, wherein the coil unit comprises a plurality of first and second printed boards, and the focus coil and the tilt

coil are mounted on the first printed board and the tracking coil is mounted on the second printed board.

Claim 6. The objective lens drive apparatus according to claim 1, wherein the coil unit comprises only one focus coil, an even number of tracking coils and two tilt coils, and wherein the magnets are configured to be magnetized in two polarities in a focus direction.

Claim 7. The objective lens drive apparatus according to claim 1, wherein the coil unit comprises an even number of focus coils, only one tracking coil and two tilt coils, and wherein the magnets are configured to be magnetized in two polarities in a tracking direction.

Claims 8-21 (Canceled).

Claim 22. An objective lens drive apparatus configured to be used in an optical pickup to detect the inclination of an optical disk to adjust the inclination of a lens in accordance with an inclination signal of the optical disk, comprising:

a magnetic circuit comprising first and second magnets separated from one another by a gap;

a coil unit comprising a laminate structure including a focus coil, a tracking coil and a tilt coil, the laminate structure disposed with the gap; and

an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens, the objective lens disposed outside of the gap in which the laminate structure is disposed,

wherein a focus servo is configured to be executed by supplying currents respectively to a plurality of the focus coils due to a sum of drive forces generated in the plurality of focus coils; and

wherein an inclination adjustment of the objective lens is configured to be executed by generating a moment around a center of gravity of a movable part due to a difference between the drive forces.

Claim 23. The objective lens drive apparatus according to claim 22, wherein the magnetic circuit comprises pairs of magnets.

Claim 24. The objective lens drive apparatus according to claim 22, wherein the coil unit comprises a plurality of printed circuit boards, and the focus coil and the tracking coil are separately disposed on the printed circuit boards.

Claim 25. The objective lens drive apparatus according to claim 22, wherein the coil unit comprises a printed circuit board, and the focus coil and the tracking coil are disposed on the printed circuit board.

Claim 26. The objective lens drive apparatus according to claim 22, wherein the coil unit comprises an even number of focus coils and only one tracking coil, and the magnets are configured to be magnetized in two polarities in a tracking direction.

Claim 27. An objective lens drive apparatus configured to be used in an optical pickup to detect the inclination of an optical disk to adjust the inclination of a lens in accordance with an inclination signal of the optical disk, comprising

a magnetic circuit comprising first and second magnets separated from one another by a gap;

a coil unit comprising a laminate structure including a focus coil, a tracking coil and a tilt coil, the laminate structure disposed within the gap; and

an objective lends connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens, the objective lens disposed outside of the gap in which the laminate structure is disposed

wherein a tracking servo is configured to be executed by supplying currents respectively to a plurality of the tracking coils due to a sum of drive forces generated in the plurality of focus coils, and

wherein an inclination adjustment of the objective lens is configured to be executed by generating a moment around a center of gravity of a movable part due to a difference between the drive forces.

Claim 28. The objective lens drive apparatus according to claim 27, wherein the magnetic circuit comprises pairs of magnets.

Claim 29. The objective lens drive apparatus according to claim 27, wherein the coil unit comprises a plurality of printed circuit boards, and the focus coil and the tracking coil is separately disposed on the printed circuit boards.

Claim 30. The objective lens drive apparatus according to claim 27, wherein the coil unit comprises a printed circuit board, and the focus coil and the tracking coil are mounted on the printed circuit board.

Claim 31. The objective lens drive apparatus according to claim 27, wherein the coil unit comprises only one focus coil and an even number of tracking coils, and the magnets are configured to be magnetized in two polarities in a focus direction.

Claims 32-41 (Canceled).

Claim 42. An objective lens drive apparatus configured to be used in an optical pickup, comprising:

a magnetic circuit comprising first and second magnets separated from one another by a gap;

a coil unit comprising a laminate structure including a focus coil, a tracking coil and a tilt coil, the laminate structure disposed in the gap; and

a lens, configured to be adjusted in a focusing direction, a tracking direction, and a tilt direction by the magnetic circuit and coils, provided in a lens holder, the lens disposed outside of the gap.

Claims 43-48 (Canceled).

Claim 49. The objective lens drive apparatus according to claim 1, wherein the focus, tilt, and tracking coils are disposed on a plurality of circuit boards, the plurality of circuit boards forming the laminate structure with one another.

Claim 50. The objective lens drive apparatus according to claim 1, wherein only one laminate structure including the focus, tracking, and tilt coils is disposed in the gap.

Claim 51. The objective lens drive apparatus according to claim 22, wherein the focus, tilt, and tracking coils are disposed on a plurality if circuit boards, the plurality of circuit boards forming the laminate structure with one another.

Claim 52. The objective lens drive apparatus according to claim 22, wherein only one laminate structure including the focus, tracking, and tilt coils is disposed in the gap.

Claim 53. The objective lens drive apparatus according to claim 27, wherein the focus, tilt, and tracking coils are disposed on a plurality of circuit boards, the plurality of circuit boards forming the laminate structure with one another.

Claim 54. The objective lens drive apparatus according to claim 27, wherein only one laminate structure including the focus, tracking, and tilt coils is disposed in the gap.

Claim 55. The objective lens drive apparatus according to claim 42, wherein the focus, tilt, and tracking coils are disposed on a plurality of circuit boards, the plurality of circuit boards forming the laminate structure with one another.

Claim 56. The objective lens drive apparatus according to claim 42, wherein only one laminate structure including the focus, tracking, and tilt coils is disposed in the gap.

EVIDENCE APPENDIX

None.

RELATED PRECEDING APPENDIX

None.